

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

UNITED STATES OF AMERICA)	
)	
v.)	Criminal No. 13-10200-GAO
)	
DZHOKHAR TSARNAEV,)	
Defendant)	

**GOVERNMENT’S OPPOSITION TO DEFENDANT’S
MOTION TO EXCLUDE TESTIMONY REGARDING
MATCHING TRANSMITTER RECEIVER BINDING CODES**

Tsarnaev argues that FBI engineer Michael McFarlane’s expected testimony concerning binding codes is inadmissible because (1) the government allegedly failed to provide adequate reports of the bind code testimony; (2) given that alleged failure, the government has failed to establish that the testimony is admissible under FRE 702 and Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993); and (3) the expert’s opinion, the defendant believes, will run afoul of Melendez-Diaz v. Massachusetts, 557 U.S. 305 (2009). These arguments are without merit.

BACKGROUND

The government has provided Tsarnaev ample information concerning the expected testimony of Michael McFarlane, an electronics engineer at the FBI’s Operational Technology Division, including, among other items: a September 2, 2014 letter outlining Mr. McFarlane’s testimony (Exhibit A); Mr. McFarlane’s

resume (Exhibit B)¹; an April 4, 2013 Report of Analysis and a September 17, 2013 Report of Analysis (Exhibit C); an Electronics Analysis Report dated October 24, 2013 concerning, among other things, a Spektrum SR201 receiver and an Electronics Analysis Report dated October 24, 2013 concerning, among other things, a Flysky FS-GT3B Transmitter and FlySky FS-GR3E receiver (Exhibit D); two supplemental disclosure letters, dated December 4, 2014 and December 19, 2014, respectively (Exhibits E); and notes and photographs taken during the testing process (Exhibit F).

The disclosures explain that the government expects Mr. McFarlane to testify about, among other things: (1) his examination of the FlySky FS-GR3E receiver found at the first bomb site, the FlySky FS-GT3B transmitter found at Laurel and Dexter Street in Watertown on April 19, 2013, and the Spektrum receiver found at the second bomb site (for which precise seizure location data has

¹ McFarlane has a bachelor in science and computer engineering from Christopher Newport University (from which he graduated in 2010). His responsibilities at the FBI, according to his resume, “consist primarily of performing forensic examinations on cellular telephones, tablets and devices contained within them, such as memory cards and SIM cards and developing tools and techniques to assist with these examinations. Other responsibilities include forensic examination of personal data assistants, radio frequency scanners and jammers, fax machines, digital voice recorders, keystroke loggers, and electronic circuit analysis on devices such as bomb detonation devices and unknown electronic circuits.” He has examined hundreds of electronic devices since his employment at the FBI in 2011, and has lectured at training programs, including on the topic of data recovery. The defendant’s motion does not challenge McFarlane’s expertise.

been produced); (2) remote control technology in general; and (3) what it means when a receiver and transmitter are bound. “Binding is the process of programming the receiver to recognize the GUID (Globally Unique Identifier) code of a single specific transmitter. When a receiver is bound to a transmitter/model memory, the receiver will only respond to that specific transmitter/model memory.” See Spektrum DR201 instruction manual, available at http://www.spektrumrc.com/ProdInfo/Files/SPMSR201_En.pdf; see also <http://www.spektrumrc.com/Articles/Article.aspx?ArticleID=1923> (“Binding is the process of training the transmitter and receiver to communicate with each other. Each radio and receiver has a unique code, called a GUID (Global Unique Identification Code) Code. This is your radio system’s thumbprint that prevents it from interfering with other radio systems or being interfered with by other radio systems.”).

The letters also explain that, as a result of his examination of the recovered items and a series of tests, Mr. McFarlane made a number of determinations, including that (1) the bombs in this case were exploded by separate transmitters; (2) the FlySky transmitter had been modified in a way that diminished its size and would limit its commercially intended purpose; (3) the recovered FlySky receiver had the same bind code as the recovered FlySky transmitter; and (4) the recovered Spektrum receiver (from which, because of its post-blast condition, a bind code

could not be recovered), was not compatible with the FlySky transmitter and could not be bound to it. The testimony will help establish, among other things, that the FlySky transmitter found at Laurel and Dexter streets was bound to the receiver found at the first bomb site and detonated the first bomb, but could not have detonated the second bomb (which had been detonated by another, unrecovered, transmitter). Together with other evidence (for example, a receipt showing the purchase of a Spektrum transmitter), the testimony will help to establish that the defendant and his brother were responsible for the Marathon bombings, that Tamerlan Tsarnaev detonated the first bomb, and that the defendant detonated the second bomb.

Of all the information set out here and in the reports and other materials disclosed to Tsarnaev, Tsarnaev's motion objects only to the proposed bind code testimony.

ARGUMENT

- A. The Court should reject Tsarnaev's complaint that the government failed to produce "reports, protocols, methodologies, [and] Quality Assurance Manuals or studies" supporting the reliability of the bind code testimony.

There is no merit to Tsarnaev's claim that the government's expert disclosures have been inadequate. He says that the information provided does not explain the actual testing done to retrieve the bind codes, and that the government has failed to provide evidence of similar studies. That is incorrect. As the

disclosures plainly spell out, Mr. McFarlane will testify that the recovered FlySky receiver contained a bind code on a microchip, and that the bind code was obtained using a commercially-available microchip reader. Reading a chip is an elementary, mechanical function, like retrieving a message from voice mail; it is not a “test” that can yield different results depending on who does it or when and how it is done. The fact that there was a bind code on the microchip alone establishes that the FlySky receiver was bound to a transmitter. To determine whether the recovered transmitter had the same bind code, the recovered transmitter was bound to a new compatible receiver (an “exemplar”) that, once bound, had the same bind code stored/contained on its microchip as displayed on the microchip found in the recovered receiver. This is the customary means of determining a transmitter’s bind code.

Tsarnaev complains that the government has not produced “Quality Assurance Manuals, or studies that could support the reliability of the opinion that the bind codes matched.” Once again, whether bind codes “match” is not a matter about which experts can disagree. Assuming the transmitter and receiver use the same communication technology, the test of whether a particular transmitter and receiver have matching bind codes is simply whether that particular transmitter activates that particular receiver. Bind code testimony is not a matter of widespread testimony or publication because the basis for the testimony is scarcely

more complicated than what a juvenile operator of a radio-controlled car does to operate the car: he binds his transmitter to a compatible receiver and then is able to operate his car without interfering with (or interference from) others driving their own radio-controlled cars. Manuals and company materials that explain remote control technology, the operation of a transmitter and receiver, and binding process, among other things, were produced to the defense.

Daubert itself rejected a standard for expert testimony requiring “general acceptance in the scientific community,” instead emphasizing the importance of admitting relevant evidence at trial and ensuring its reliability. Thus, under Daubert, peer review may be a consideration in assessing the scientific validity of a particular technique or methodology, but is not determinative of reliability. Likewise, Kumho Tire Company, LTD.v. Carmichael, 526 U.S. 137 (1999), emphasized that “the test of reliability is ‘flexible,’” 526 U.S. at 214; that a court’s determination of reliability must be based on the “particular circumstances of the particular case at issue,” 526 U.S. at 151; and that it may be based on other factors not identified in Daubert, like “personal knowledge or experience.” 528 U.S. at 150. See United States v. Chiaradio, 684 F.3d 265, 278 (1st Cir. 2012) (the defendant’s assertion that the FBI’s “enhanced peer-to-peer software” (EP2P) had not been subjected to peer review in the scientific community was “true as far as it goes — but it does not take the defendant very far. The Daubert factors are not a

‘definitive checklist or test,’ but form the basis for a flexible inquiry into the overall reliability of a proffered expert's methodology”) (internal citation and quotation marks omitted); see also Milward v. Acuity Specialty Products Group, Inc., 639 F.3d 11, 15 (1st Cir. 2011) (expert testimony that rests on “good grounds” should be admitted) (citing Daubert, 509 U.S. at 590). Most important, Rule 702, amended after Daubert and Kumho Tire, does not contain such a requirement.

Under Rule 702, expert testimony is admissible where “(a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue” (and there can be no colorable challenge to this aspect of the bind-code testimony); “(b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (c) the expert has reliably applied the principles and methods to the facts of this case.” The expert’s methodology “is commonly the central focus on of a Daubert inquiry.” Samaan v. St. Joseph Hosp., 670 F.3d 21, 31 (1st Cir. 2012). Here, Mr. McFarlane’s testimony is based on recovered evidence, and his methodology (i.e. removing and reading a microchip using a commercially-available card reader to obtain the receiver’s unique binding code, and binding the recovered transmitter to a new receiver to establish the bind code of the recovered transmitter) used well-known and valid technology (remote control technology, microchips, and microchip readers) and simple tests that are

systematic and logically sound and can be easily replicated. Samaan v. St. Joseph Hosp., 670 F.3d at 31 (considering whether results are independently verifiable); Chiaradio, 684 F.3d at 278 (same). Indeed, as noted earlier, the “tests” Mr. McFarlane performed are not the kind that yield results susceptible to interpretation; rather, the “test” of reading a binding-code using a microchip reader is like reading the words in a book using a magnifying glass, and the “test” of binding a transmitter to a receiver is no different from operating a radio-controlled car by following the instructions that come with it. In short, the tests involved none of the subjective judgments that may lend themselves to criticism in other contexts. United States v. Milkiewicz, 470 F.3d 390, 401 (1st Cir. 2006); see also Daubert, 509 U.S. at 590 (“the word ‘knowledge’ [in Rule 702] connotes more than subjective belief or unsupported speculation”); O’Conner v. Commonwealth Edison Co., 13 F.3d 1090 (7th Cir. 1994) (expert testimony based on a completely subjective methodology held properly excluded). The bind code testimony fully comports with Rule 702.²

Not only is the bind code evidence methodology sound and verifiable, but, it should be noted, Daubert and Rule 702 establish a rule of inclusion. Johnson v. Mead Johnson & Co., LLC, 754 F.3d 557, 562 (8th Cir. 2014) (Daubert calls for the

² It is, moreover, supported by the testing and conclusions made by others who performed the same tests as did McFarlane and drew the same conclusions. See Section B, below.

liberal admission of expert testimony). In fact, even if the evidence were somewhat “shaky” (and it is most definitely is not), it would be admissible. Daubert, 509 U.S. at 596. “So long as an expert’s scientific testimony rests upon ‘good grounds,’ based on what is known,” Daubert, 509 U.S. at 590, it should be tested by the adversarial process. . . . Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.” Samaan v. St. Joseph Hosp., 670 F.3d at 31 (citing Daubert, 509 U.S. at 596). That expert testimony meets Rule 702’s requirements only needs to be established by a preponderance of evidence. Daubert, 509 U.S. at 5901 (citing FRE 104(a)).

In sum, Tsarnaev’s argument that Mr. McFarlane’s testimony should be excluded because the government did not provide him with required discovery needed to establish the admissibility (*i.e.* the relevance and reliability) of the expert testimony is without merit and should be rejected. The disclosures have been adequate and, moreover, the proposed evidence meets the requirements of Rule 702.

B. Mr. McFarlane’s testimony will not run afoul of *Melendez-Diaz*.

There are two reasons the Court should reject Tsarnaev’s argument that because others had originally ascertained and matched the bind codes, “the expert opinion . . . [does] not belong to McFarlane at all.” First, experts commonly base

their opinions on data collected by others, and Melendez-Diaz did not criticize, let alone prohibit, that practice. Second, the issue is moot because Mr. McFarlane has personally recreated the parts of the data-collection that had previously been delegated to others.

In Melendez-Diaz, the Court held that a certificate of forensic analysis, admitted to establish the truth of statements in the certificate, was testimonial and was inadmissible because the analyst was not present at trial and was unavailable for cross-examination. 557 U.S. at 310. Melendez-Diaz was followed by Bullcoming v. New Mexico, 131 S. Ct. 2705 (2011), in which the Court held that the Confrontation Clause did not allow the admission of an analyst's signed, forensic report certifying the results of a blood-alcohol test when offered through the trial testimony of another scientist who "did not sign the certification or perform or observe the test" and who had no "independent opinion" about its results. 131 S.Ct. at 2710, 2715- 2716. Bullcoming was followed by Williams v. Illinois, 132 S.Ct. 2221 (2012), in which a divided Supreme Court found no Confrontation Clause violation from the admission at a bench trial of expert testimony that was based on the report of a non-testifying DNA analyst. Together, these cases hold that an expert who renders an opinion must appear in court be subject to cross-examination, but he may still base his opinion on data, and even on tests, performed by others. That is exactly what Mr. McFarlane initially did here.

The Court need not reach the Melendez-Diaz issue in any event, because it is moot. As noted above, Mr. McFarlane has personally recreated the parts of the data-collection that had previously been delegated to others and has obtained the exact same results. There is nothing inappropriate in this. United States v. Soto, 720 F.3d 51, 59-60 (1st Cir. 2013) (government may ask agent to replicate a forensic examination and testify to his own results). Consequently, Tsarnaev will be able to fully cross-examine McFarlane concerning his testing procedures and conclusions at trial.

CONCLUSION

WHEREFORE, the government respectfully requests that the Court deny Tsarnaev's *Motion to Exclude Testimony Regarding Matching Transmitter- Receiver Binding Code*.

Respectfully submitted,

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Certificate of Service

I hereby certify that this opposition was served by electronic mail on Dzhokhar Tsarnaev's counsel, Judy Clarke, Esq., on December 22, 2014.

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